

RRRRRRRRRRRR		UUU	UUU	NNN	NNN	000000000	FFFFFFFFFFFFFF	FFFFFFFFFFFFFF
RRRRRRRRRRRR		UUU	UUU	NNN	NNN	000000000	FFFFFFFFFFFFFF	FFFFFFFFFFFFFF
RRRRRRRRRRRR		UUU	UUU	NNN	NNN	000000000	FFFFFFFFFFFFFF	FFFFFFFFFFFFFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNNNNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNNNNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNNNNN	NNN	000	FFF	FFF
RRRRRRRRRRRR		UUU	UUU	NNN	NNN	000	FFFFFFFFFFFFFF	FFFFFFFFFFFFFF
RRRRRRRRRRRR		UUU	UUU	NNN	NNN	000	FFFFFFFFFFFFFF	FFFFFFFFFFFFFF
RRRRRRRRRRRR		UUU	UUU	NNN	NNN	000	FFFFFFFFFFFFFF	FFFFFFFFFFFFFF
RRR	RRR	UUU	UUU	NNN	NNNNNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNNNNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNNNNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUU	UUU	NNN	NNN	000	FFF	FFF
RRR	RRR	UUUUUUUUUUUUUUUU	NNN	NNN	000000000	FFF	FFF	
RRR	RRR	UUUUUUUUUUUUUUUU	NNN	NNN	000000000	FFF	FFF	
RRR	RRR	UUUUUUUUUUUUUUUU	NNN	NNN	000000000	FFF	FFF	

```
FFFFFFFFF  IIIIIII  NN      NN  DDDDDDDD
FFFFFFFFF  IIIIIII  NN      NN  DDDDDDDD
FF         II      NN      NN  DD      DD
FF         II      NN      NN  DD      DD
FF         II      NNNN     NN  DD      DD
FF         II      NNNN     NN  DD      DD
FFFFFFFFF  II      NN      NN  DD      DD
FFFFFFFFF  II      NN      NN  DD      DD
FF         II      NN      NN  DD      DD
FF         II      NN      NN  DD      DD
FF         II      NN      NN  DD      DD
FF         II      NN      NN  DD      DD
FF         IIIIIII  NN      NN  DDDDDDDD
FF         IIIIIII  NN      NN  DDDDDDDD
```

```
....
....
....
....
```

```
LL         IIIIIII  SSSSSSSS
LL         IIIIIII  SSSSSSSS
LL         II      SS
LL         II      SS
LL         II      SS
LL         II      SS
LL         II      SSSSSS
LL         II      SSSSSS
LL         II      SS
LL         II      SS
LL         II      SS
LL         IIIIIII  SSSSSSSS
LLLLLLLLLL IIIIIII  SSSSSSSS
LLLLLLLLLL IIIIIII  SSSSSSSS
```

```
0001 0 MODULE find ( IDENT = 'V04-000'
P 0002 0 %BLISS32[, ADDRESSING_MODE (EXTERNAL = LONG_RELATIVE,
0003 0 NONEXTERNAL = LONG_RELATIVE)]
0004 0 ) =
0005 1 BEGIN
0006 1
0007 1 *****
0008 1 *
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0026 1 *
0027 1 *****
0028 1
0029 1 ++
0030 1
0031 1 FACILITY: DSR (Digital Standard RUNOFF) / DSRPLUS
0032 1
0033 1 ABSTRACT: Uses a binary search to look up a keyword.
0034 1
0035 1 ENVIRONMENT: Transportable
0036 1
0037 1 AUTHOR: R.W.Friday CREATION DATE: May, 1978
0038 1
0039 1
```


FIND
V04-000

Revision History

D 6
16-Sep-1984 00:28:19
14-Sep-1984 13:06:16

VAX-11 Bliss-32 V4.0-742
DISK\$VMSMASTER:[RUNOFF.SRC]FIND.BLI;1 Page 2 (2)

:	41	0040	1	%SBTTL 'Revision History'
:	42	0041	1	
:	43	0042	1	MODIFIED BY:
:	44	0043	1	
:	45	0044	1	002 RER00002 Ron Randall 07-Mar-1983
:	46	0045	1	Global edit of all modules. Updated module names, idents,
:	47	0046	1	copyright dates. Changed require files to BLISS library.
:	48	0047	1	
:	49	0048	1	--
:	50	0049	1	

**F

FIND
V04-000

Module Level Declarations

E 6
16-Sep-1984 00:28:19
14-Sep-1984 13:06:16

VAX-11 Bliss-32 V4.0-742
DISK\$VMSMASTER:[RUNOFF.SRC]FIND.BLI;1
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(3)

```
.. 52      0050 1 %SBTTL 'Module Level Declarations'
.. 53      0051 1
.. 54      0052 1
.. 55      0053 1  TABLE OF CONTENTS:
.. 56      0054 1
.. 57      0055 1  INCLUDE FILES:
.. 58      0056 1
.. 59      0057 1  LIBRARY 'NXPORT:XPORT';      ! XPORT Library
.. 60      0058 1  REQUIRE 'REQ:RNODEF';      ! RUNOFF variant definitions
.. 61      0189 1
.. 62      U 0190 1  %IF DSRPLUS %THEN
.. 63      U 0191 1  LIBRARY 'REQ:DPLLIB';      ! DSRPLUS BLISS Library
.. 64      0192 1  %ELSE
.. 65      0193 1  LIBRARY 'REQ:DSRLIB';      ! DSR BLISS Library
.. 66      0194 1  %FI
.. 67      0195 1
.. 68      0196 1
.. 69      0197 1  EXTERNAL REFERENCES:
.. 70      0198 1
.. 71      0199 1  EXTERNAL ROUTINE
.. 72      0200 1  TPROBE;
.. 73      0201 1
```

```
75 0202 1 GLOBAL ROUTINE FIND (KEY, SIZE, LIST) =
76 0203 1
77 0204 1 ++
78 0205 1 FUNCTIONAL DESCRIPTION:
79 0206 1
80 0207 1     Searches LIST in an attempt to recognize KEY.
81 0208 1     A binary search algorithm is used.
82 0209 1
83 0210 1 FORMAL PARAMETERS:
84 0211 1
85 0212 1     KEY is the word that is to be identified; SIZE is its length.
86 0213 1     LIST is a list of keywords, as defined in the module LP1.
87 0214 1
88 0215 1 IMPLICIT INPUTS:      None
89 0216 1
90 0217 1 IMPLICIT OUTPUTS:    None
91 0218 1
92 0219 1 ROUTINE VALUE:
93 0220 1 COMPLETION CODES:
94 0221 1
95 0222 1     If KEY is recognized, the address of the corresponding
96 0223 1     entry in LIST is returned. Otherwise, zero is returned.
97 0224 1
98 0225 1 SIDE EFFECTS:          None
99 0226 1 --
100 0227 1
101 0228 2 BEGIN
102 0229 2 MAP
103 0230 2     LIST : REF VECTOR;
104 0231 2
105 0232 2 LOCAL
106 0233 2     RESULT,
107 0234 2     TOP,
108 0235 2     BOTTOM,
109 0236 2     HALF_OF_RANGE,
110 0237 2     MIDPOINT;
111 0238 2
112 0239 2 TOP = 0;
113 0240 2 BOTTOM = .LIST [-1] - 1;
114 0241 2
115 0242 2 WHILE 1 DO
116 0243 2     BEGIN
117 0244 2         HALF_OF_RANGE = (.BOTTOM - .TOP + 1)/2;
118 0245 2         MIDPOINT = .TOP + .HALF_OF_RANGE;
119 0246 2         RESULT = TPROBE (.KEY, .SIZE, .LIST [.MIDPOINT]);
120 0247 2
121 0248 2     CASE .RESULT FROM 0 TO 3 OF
122 0249 2         SET
123 0250 2
124 0251 2         [FOUND] :
125 0252 2             RETURN .LIST [.MIDPOINT];
126 0253 2
127 0254 2         [GIVE UP] :
128 0255 2             RETURN 0;
129 0256 2
130 0257 2         [TRY ABOVE] :
131 0258 2             BEGIN
```



```
132 0259 4
133 0260 4      IF .MIDPOINT EQL .TOP
134 0261 4      THEN
135 0262 4          RETURN 0
136 0263 4      ELSE
137 0264 4          BOTTOM = .MIDPOINT - 1;
138 0265 4
139 0266 4      END;
140 0267 4
141 0268 4      [TRY BELOW] :
142 0269 4          BEGIN
143 0270 4
144 0271 4          IF .MIDPOINT EQL .BOTTOM
145 0272 4          THEN
146 0273 4              RETURN 0
147 0274 4          ELSE
148 0275 4              TOP = .MIDPOINT + 1;
149 0276 4
150 0277 4          END;
151 0278 4      TES;
152 0279 4
153 0280 4      END
154 0281 4
155 0282 4      END;
```

!End of FIND

```
.TITLE FIND
.IDENT \V04-000\
```

```
.EXTRN TPROBE
```

```
.PSECT $CODE$,NOWRT,2
```

```
.ENTRY FIND, Save R2,R3,R4,R5,R6
```

```
CLRL TOP 0202
MOVL LIST, R4 0239
SUBL3 #1, -4(R4), BOTTOM 0240
SUBL3 TOP, BOTTOM, R1 0244
INCL R1
DIVL3 #2, R1, HALF OF RANGE
ADDL3 HALF OF RANGE, TOP, MIDPOINT 0245
PUSHL (R4)[MIDPOINT] 0246
MOVQ KEY, -(SP)
CALLS #3, TPROBE
CASEL RESULT, #0, #3 0248
.WORD 6$-2$,-
      3$-2$,-
      4$-2$,-
      5$-2$
MOVL (R4)[MIDPOINT], R0 0252
RET
CMPL MIDPOINT, TOP 0260
BEQL 6$
MOVAC -1(R2), BOTTOM 0264
BRB 1$ 0248
CMPL MIDPOINT, BOTTOM 0271
BNEQ 7$
```

```
007C 00000
55 D4 00002
OC AC D0 00004
53 FC A4 54
51 53 53
56 51
52 55
00000000G 7E
03 00 0008
001D 0002D 2$
6442 D0 00035 3$
04 04 00039
55 52 D1 0003A 4$
53 FF A2 9E 0003D
53 52 11 00043
03 12 00048
```

FIND
V04-000

Module Level Declarations

H 6
16-Sep-1984 00:28:19
14-Sep-1984 13:06:16

VAX-11 Bliss-32 V4.0-742
DISK\$VMSMASTER:[RUNOFF.SRC]FIND.BLI;1

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(4)

55 01 50 D4 0004A 6\$: CLRL R0
04 0004C RET
A2 9E 0004D 7\$: MOVAB 1(R2), TOP
BA 11 00051 BRB 1\$

: 0273
: 0275
: 0242

; Routine Size: 83 bytes, Routine Base: \$CODE\$ + 0000

: 156 0283 1
: 157 0284 1 END
: 158 0285 0 ELUDOM

!End of module

PSECT SUMMARY

Name	Bytes	Attributes
\$CODE\$	83	NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, CON,NOPI,ALIGN(2)

Library Statistics

File	----- Total	Symbols Loaded	----- Percent	Pages Mapped	Processing Time
\$255\$DUA28:[SYSLIB]XPORT.L32;1	590	0	0	252	00:00.1
\$255\$DUA28:[RUNOFF.SRC]DSRLIB.L32;1	1248	4	0	86	00:00.3

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS\$:FIND/OBJ=OBJ\$:FIND MSRC\$:FIND/UPDATE=(ENH\$:FIND)

: Size: 83 code + 0 data bytes
: Run Time: 00:03.4
: Elapsed Time: 00:14.3
: Lines/CPU Min: 5104
: Lexemes/CPU-Min: 9438
: Memory Used: 43 pages
: Compilation Complete

0341 AH-BT13A-SE
VAX/VMS V4.0

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